

Using regional stormwater facilities to promote quality, sustainable development

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City of Lenexa

Presentation Outline

Introduction to Lenexa

Rain to Recreation

- Approach
- Goals
- Regional Projects

Clear Creek Regional Facility

- Development Process

Project Partners:

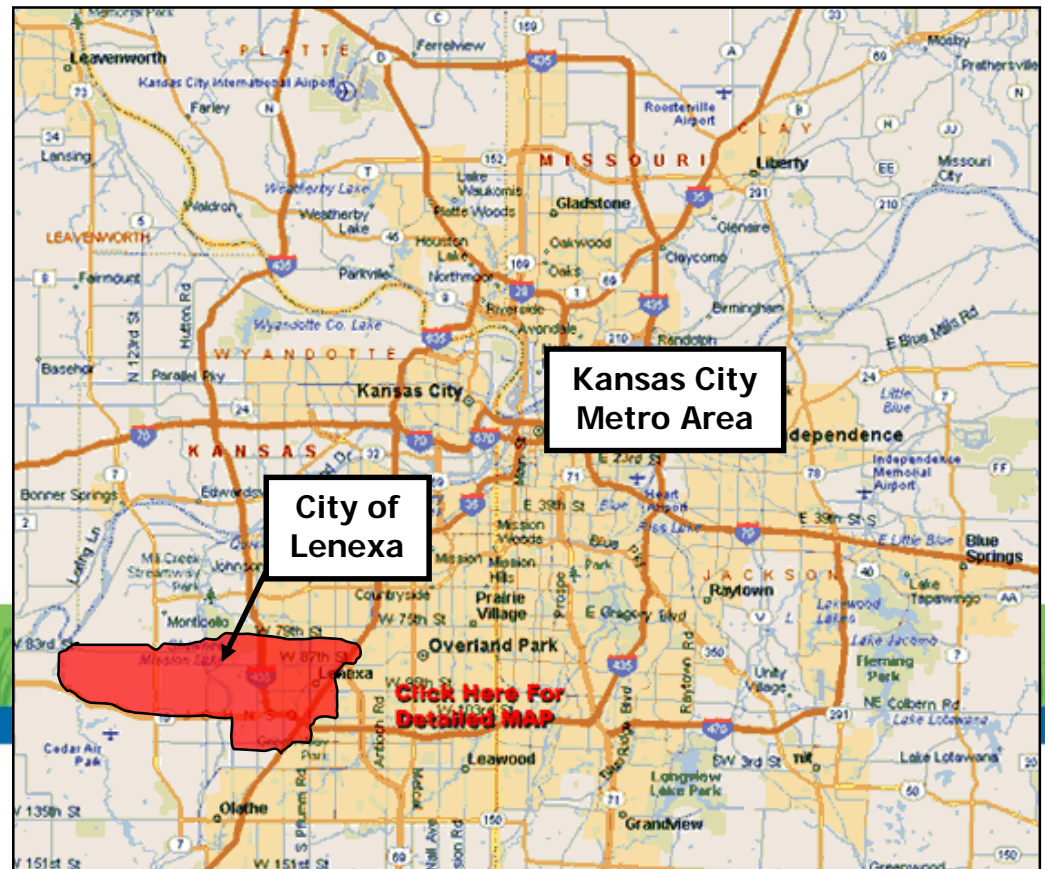


VF Anderson Builders

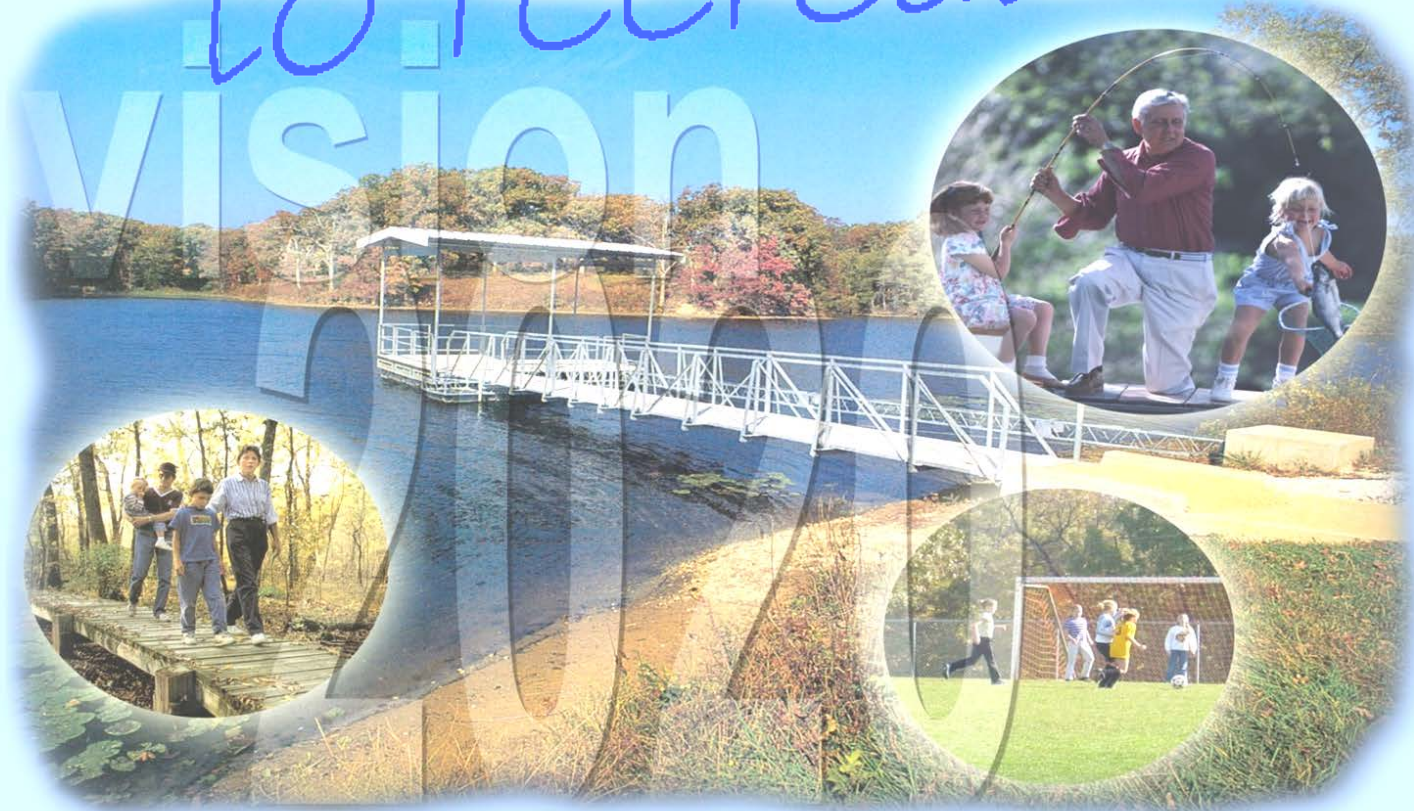
WLK Urban Design

Introduction to Lenexa

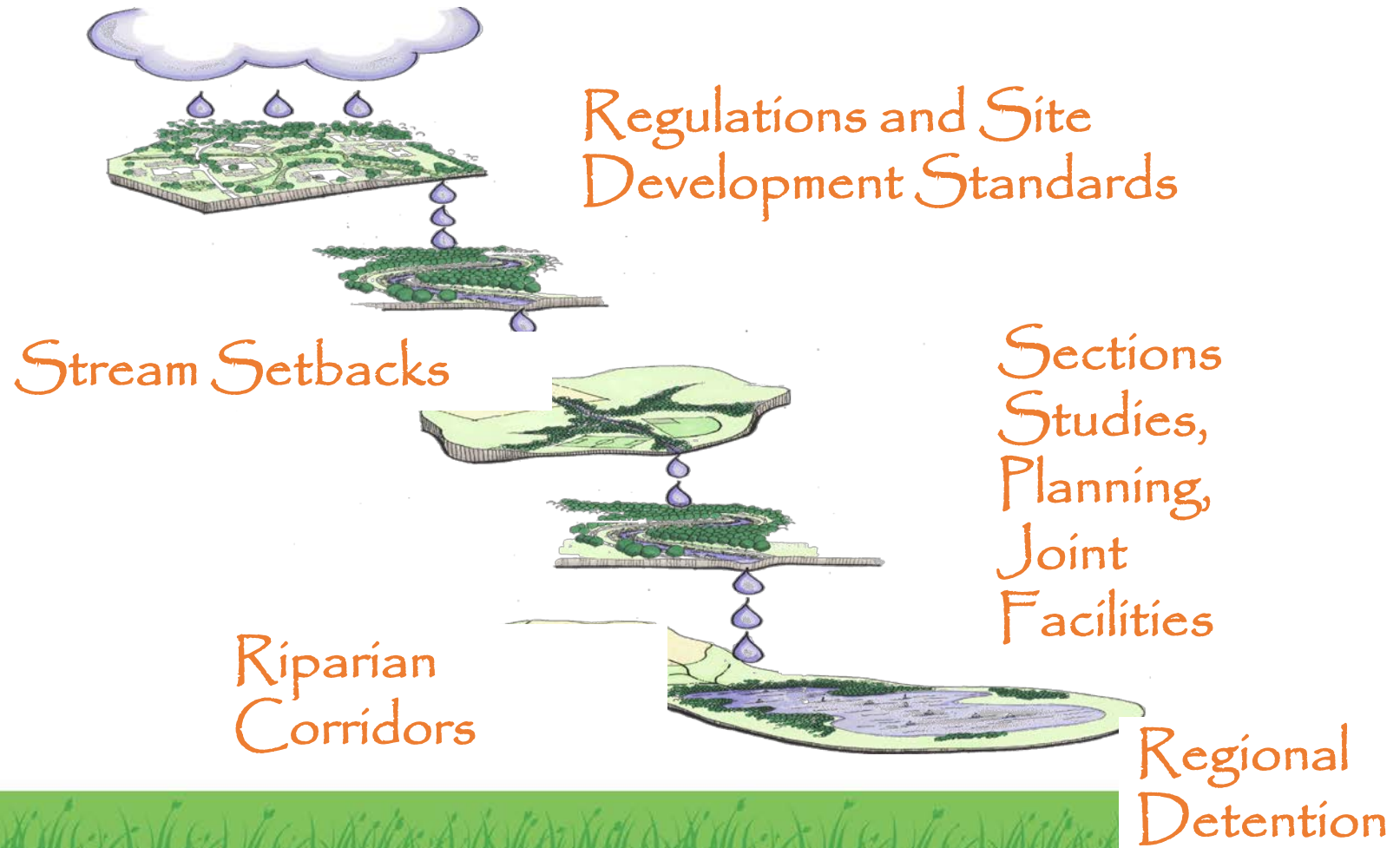
- Kansas City Metro Area population 2 million
- 52,000 residents
- 34 sq. miles



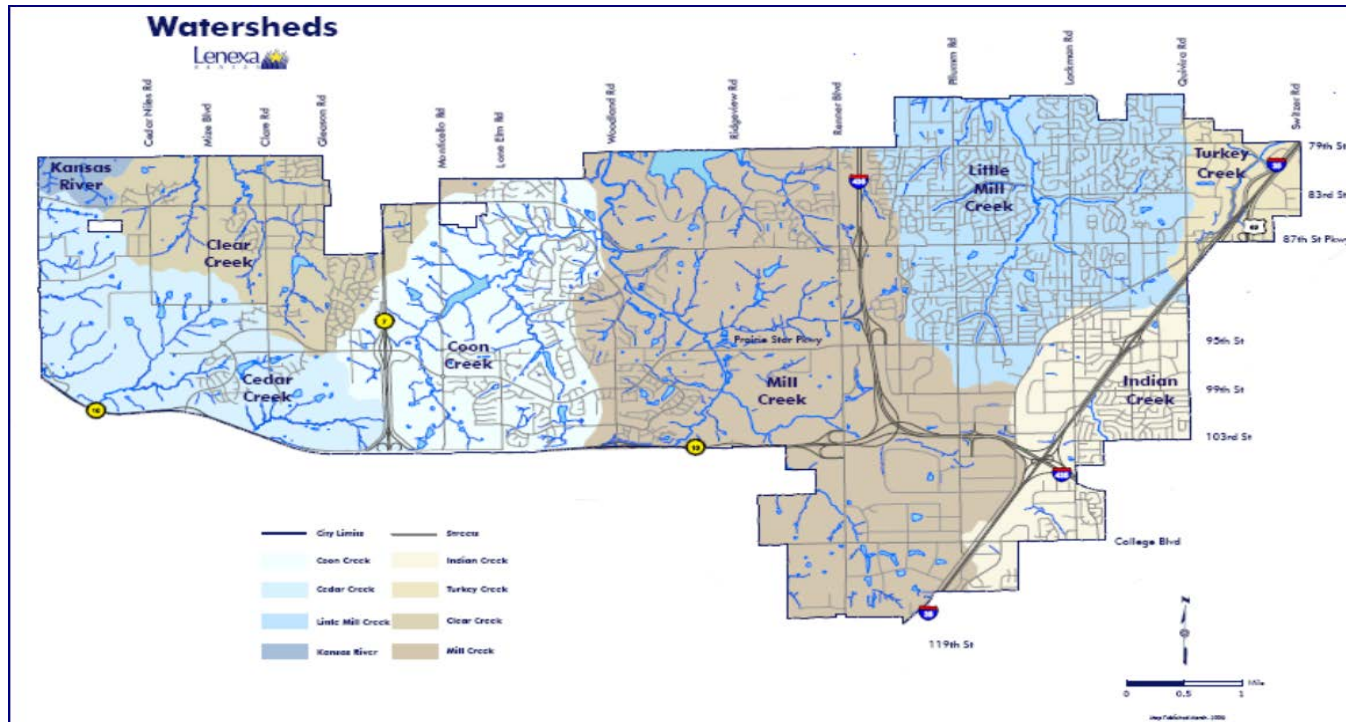
rain to recreation



Rain to Recreation - Systems Approach

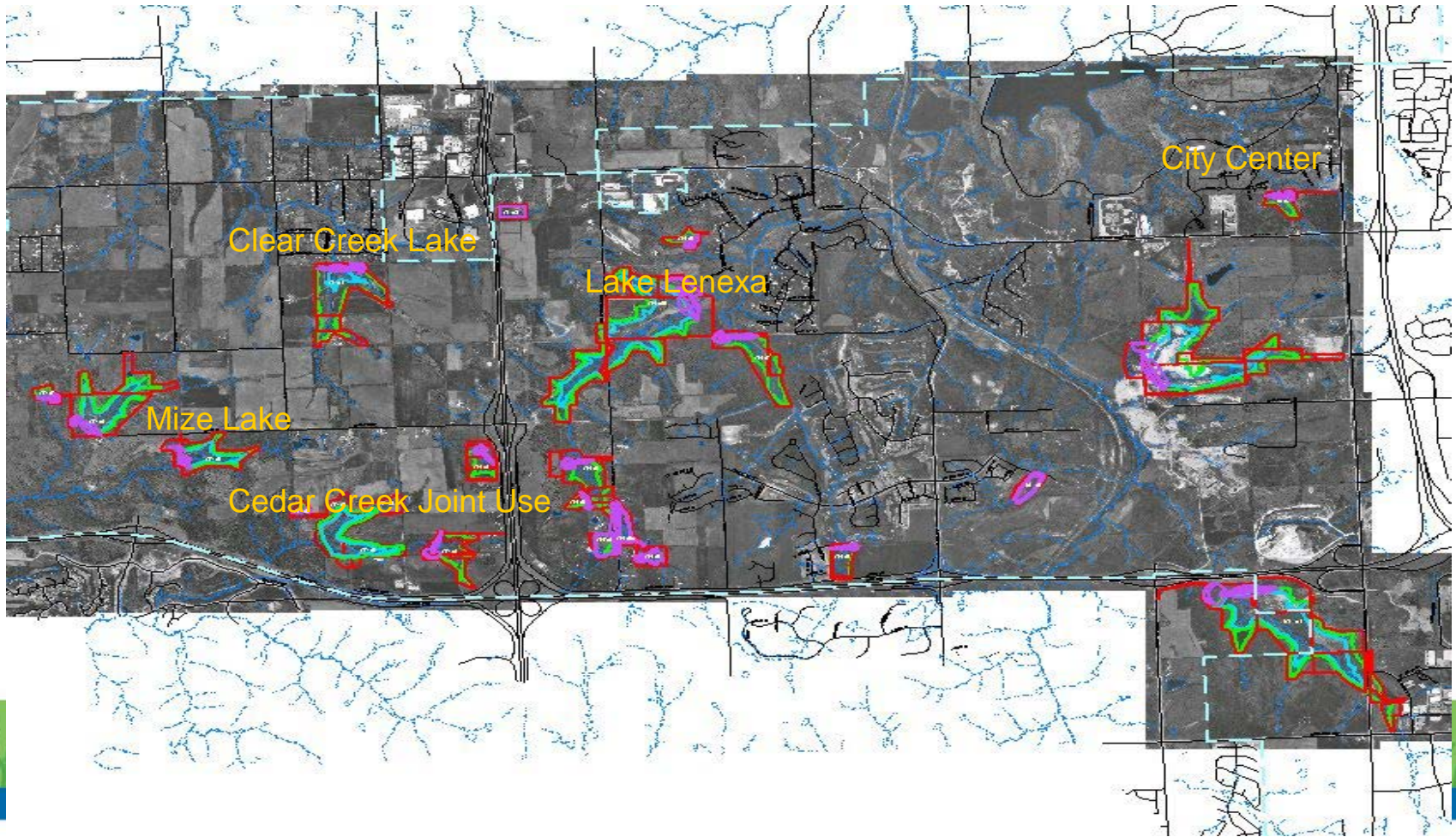


Introduction to Lenexa



Watersheds drain to the Kansas and Missouri Rivers

Regional Retention & Detention



Rain to Recreation - Goals

All projects include the following components

- Water quality
- Flood control
- Recreation
- Preserve open space and natural resources

City development goals

- A community full of places with beauty, social offerings and openness that draw people to them
- Vibrant neighborhoods that offer a variety of housing types, sizes and prices.

Rain to Recreation - Regional Projects

- City Center Central Green
- Lake Lenexa
- Clear Creek Wetlands



City Center



Lenexa
KANSAS

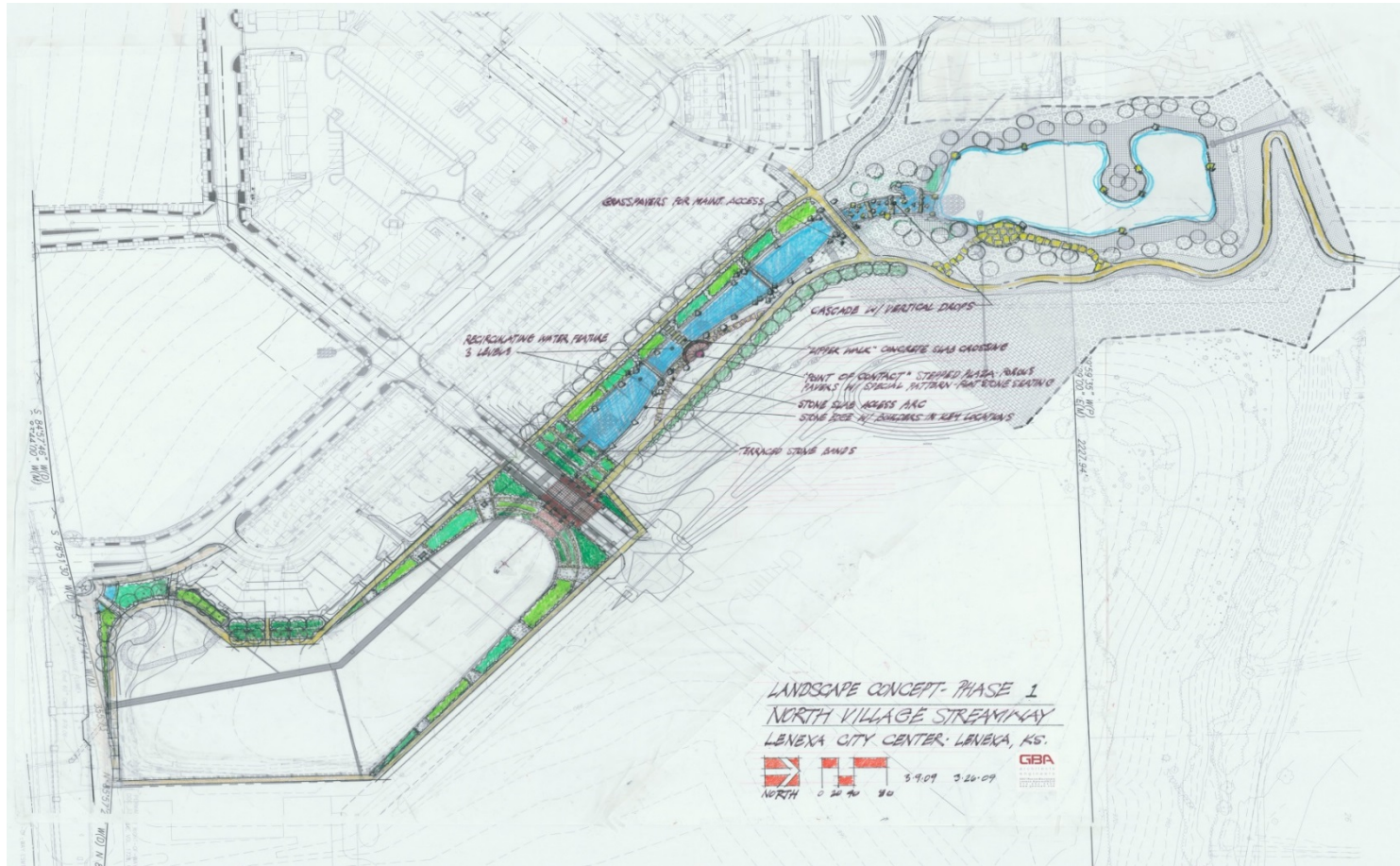


*Adopted
April, 2007*

Lenexa City Center Neighborhood Design Standards & Guidelines



City Center Central Green



City Center Central Green



City Center



Lake Lenexa & Blackhoof Park



Black Hoof Park & Lake Lenexa



Black Hoof Park & Lake Lenexa



Clear Creek Project Process

Planning (Subshed Study)

- Goals
- Gather Information
- Stakeholder Involvement

Action

- Purchase Land
- Design
- Construction

Maximizing Potential

- Sustainability goals
- Concept design
- Financial Incentive



Clear Creek Project Process– Goals (Flood Control & Water Quality)

Flood Control

- Stormwater master plan report
 - Identify flood prone areas
 - Detention vs Corridor Management
- FEMA Floodplain



Channel Protection and Water Quality

- Stream forming flows (1,10 yr)
- Water quality drawdown (40 hour)

Clear Creek Project Process– Goals (Natural Resources & Recreation)

Preservation/Enhancement

- Riparian corridor
- Wetlands
- Native vegetation

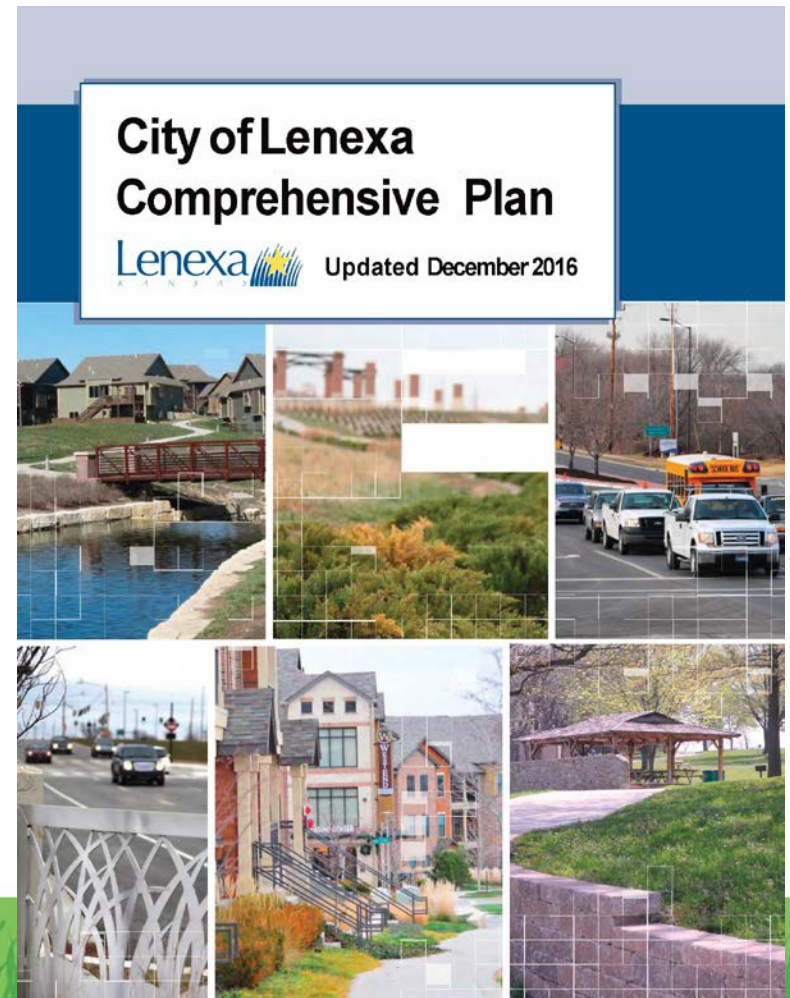
Recreation

- Significant park land
- Trail connections
- Passive recreation



Clear Creek Project Process – Gather Information(Future Land Use)

- Comprehensive Plan
- Zoning
- Amendment to the Plan



Clear Creek Project Process – Gather Information(Other Studies)

Western Longwater Masterplan
Lenexa Stormwater Roadway Study
Lenexa Buildout Study
Lenexa Statics Study
Lenexa Aquatic Team Asset Inventory
Lenexa Vision 2020
Trails Alignment Study

Clear Creek Project Process –Stakeholder Involvement

- Property owners
- Adjacent residents
- Developers
- City staff
- Public officials
- Utilities



Clear Creek Project Process – Gather Information(Comprehensive Plan Update)

- More detailed land use
- Updated zoning
- Update comprehensive plan



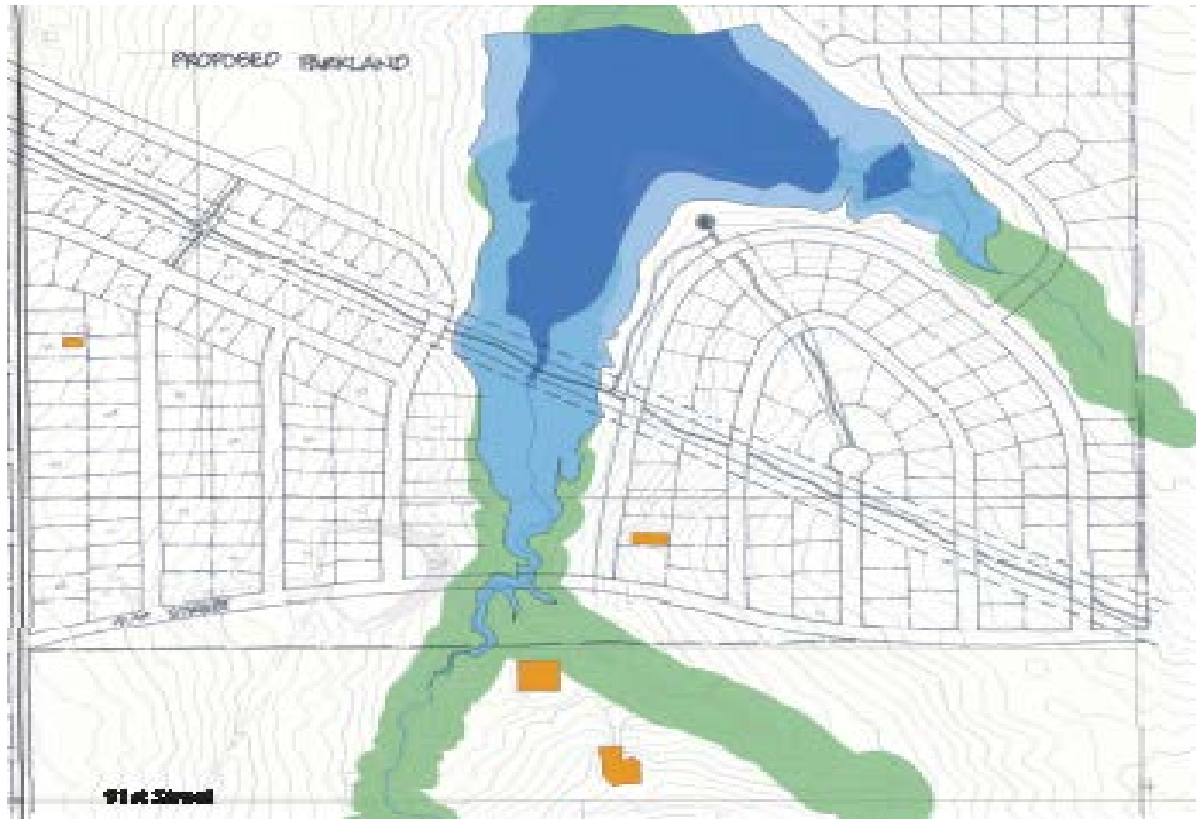
Clear Creek Project Process – Purchase Land

Purchased approximately 100 acres in 2006:

- \$918,336 – park bond proceeds (21% of total)
- \$1,399,369 – transfer from General Fund (32% of total)
- \$2,055,323 – stormwater bond proceeds (47% of total)
- Total of \$4,373,028



Clear Creek Project Process – Design

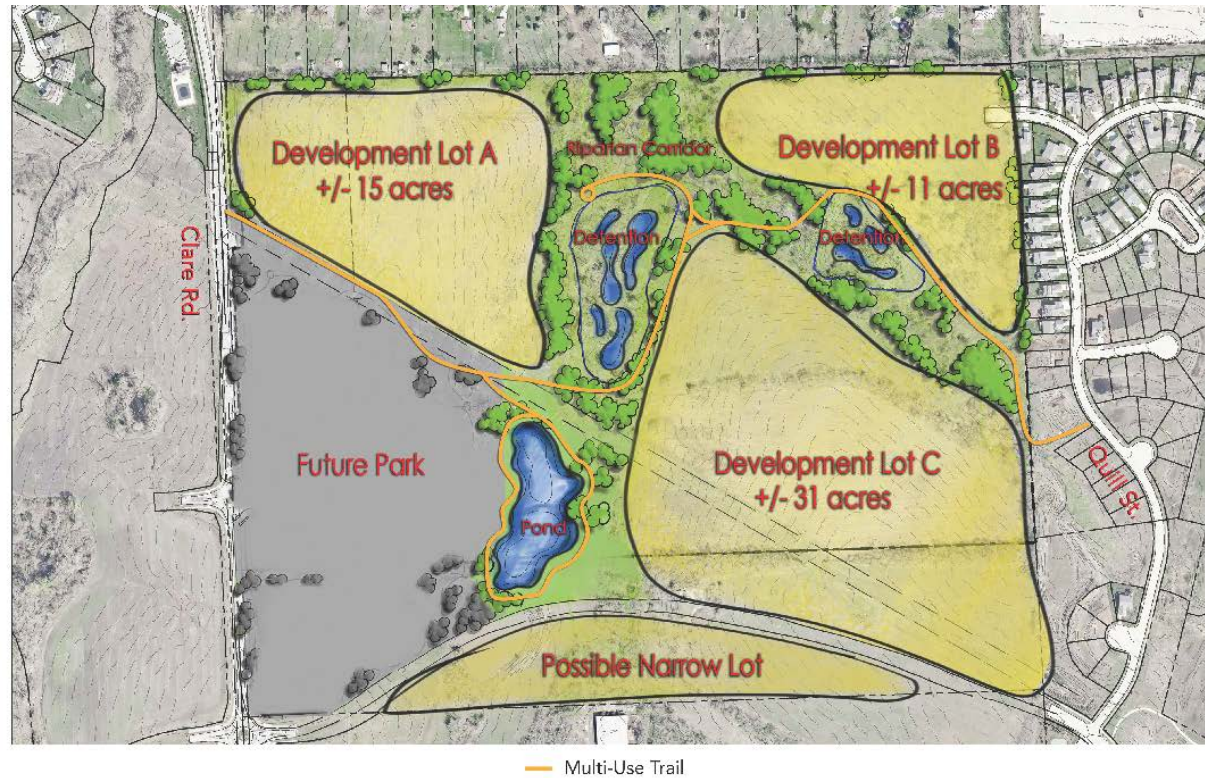


Clear Creek Project Process – Change

- Recession
- Bankruptcy
- Reprioritize
- Decreased development



Clear Creek Project Process – Design Again



Clear Creek Regional Stormwater Facility
Lenexa, Kansas

OCHSNER
HARE & HARE
ARCHITECTS

OLSSON
ASSOCIATES

not to scale N

Clear Creek Project Process - Construction

- Completed in Spring 2017
- Included 1.5 acre recreational pond (capable of supporting fishing); regional in-stream wetland basins; stream corridor enhancement; over 6,000' trail system.
- Total land disturbance: 17 acres +/-
- Cost: \$2,060,188.90
 - \$1,784,323.71 construction
 - \$275,865.25 design



Clear Creek Project Process - Construction



Clear Creek Project Process - Construction



Clear Creek Project Process – Maximizing Potential

Request of proposals

- *Goals*
- *Concept*
- *Finances*



Clear Creek Project Process – Maximizing Potential (Goals)

Maximize the potential of the property through:

- smaller lots in layout **denser than typical** and complimentary to and coordinated with the amenities provided by the City.
- Narrow lots in a **city block street system** with both **front and rear access garages**.
- Include generous **open space connections** to trails and the Clear Creek amenities
- Density of **four dwelling units per acre**.
- **Engage and enhance the land, water, wildlife**, and other resources of the City owned property.
- The creation of a **sense of community**, enhancement of the natural areas for residents and wildlife, and conservation and protection of valuable local resources.

Clear Creek Project Process – Maximizing Potential (Concept)



PARCEL SUMMARY

A 16.8 ACRES*
 44 LOTS AT $\sim 60' \times 120'$
 21 LOTS AT $\sim 40' \times 120'$
 67 TOTAL SINGLE FAMILY LOTS
 4.0 DUA

B 11.2 ACRES*
 30 LOTS AT $\sim 60' \times 120'$
 12 LOTS AT $\sim 40' \times 120'$
 42 TOTAL SINGLE FAMILY LOTS
 3.8 DUA

C 25.8 ACRES*
 • 18.4 AC NORTH DEVELOPMENT AREA
 • 4.5 AC POWER LINE EASEMENT
 • 2.9 AC SOUTH DEVELOPABLE AREA

35 LOTS AT $\sim 60' \times 120'$
 43 LOTS AT $\sim 40' \times 120'$
 78 TOTAL SINGLE FAMILY LOTS
 4.2 DUA (NET DENSITY NORTH AREA)

187 TOTAL SINGLE FAMILY DETACHED LOTS
 46.4 ACRES (NET NORTH RESIDENTIAL ACRES)
 4.1 DUA (NET DENSITY)

53.8 ACRES (TOTAL GROSS ACRES INCLUDED COMMUNITY CENTER, POOL & CHURCH PARCELS)

PLAN FEATURES

- CITY BLOCK: STREET SYSTEM WITH BOTH FRONT AND REAR ACCESS GARAGES
- STREET FRONTAGES WITH GENEROUS OPEN SPACE CONNECTIONS TO TRAILS AND CLEAR CREEK OPEN SPACE
- HIGHER DENSITY USING NARROW LOTS WITH REAR GARAGES

Clear Creek Project Process – Maximizing Potential (Concept)



PARCEL A PLAN VIEW



2 CAR FRONT GARAGE W/ PORCHES – 1 & 2 STORY OPTIONS

2 CAR REAR GARAGE BUNGALOWS – 1 & 2 STORY OPTIONS

CONCEPTUAL HOME ELEVATIONS

NOTE: 2 TYPES OF HOUSES ARE SHOWN FOR STUDY PURPOSES.

- 2 CAR FRONT GARAGE HOUSES ARE SHOWN WITH 20' SETBACK TO GARAGE AND FRONT PORCH EXTENDING CLOSER TO STREET
- (+/- 40' - 45' W X 50' - 55' D FOOT-PRINT)
- 2 CAR REAR GARAGES ARE SHOWN w/ FRONT PORCHES AND REAR GARAGES
- (+/- 30' W X 60' - 70' D FOOT-PRINTS)



CLARE ROAD ENTRANCE PARK



CLARE ROAD ENTRANCE LOOKING NORTH



CLARE ROAD ENTRANCE LOOKING WEST

Clear Creek Project Process – Maximizing Potential (Finances)

- Green Infrastructure requirement for all new development and redevelopment (BMP Manual)
 - Based on increase in runoff
 - Encourages preservation of open space
 - Encourages use of infiltration methods
- Full spectrum detention requirements
 - Channel forming flows
 - 40 hour drawdown
 - Flood control as needed

Clear Creek Project Process – Maximizing Potential (Finances)

Table 4: Prairie Creek Crossing Data		
	Basin 5	Basin 6
Tributary Area	23.5	11.0
Storage Vol. Required (ac-ft)	3.7	1.7
Earthwork Volume (yds^3)	8,790	5,530
Estimated Construction Costs	\$174,000	\$125,000
Costs per Tributary Acre	\$10,785	\$15,768
Costs per Trib. Acre – Single Family Residential Rate	\$6,778	\$10,115

Clear Creek Project Process - Land Sale (Finances)

Costs

- *Land cost*
- *Stormwater management fee in lieu*

Benefits

- *Savings on excise taxes*
- *Higher density*
- *Decreased construction and maintenance costs*
- *Increased value do to adjacent public open space*

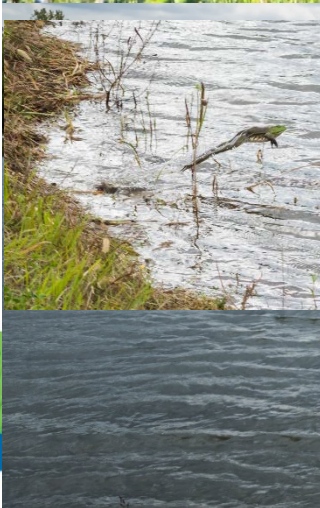


In Summary.....

The keys to using Good watershed planning to promote quality development include:

- *Be comprehensive*
- *Define your goals*
- *Involve all stakeholders*
- *Partner with developers*
- *Be patient/flexible*

Build it and they will come!!!!



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